

## A new species of *Opercularia* (Rubiaceae) from Western Australia

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### Abstract

Keighery, G.J. A new species of *Opercularia* (Rubiaceae) from Western Australia. *Nuytsia* 13 (1): 29–32 (1999). A new species of *Opercularia* (Rubiaceae) is described: *O. loganioides* Keighery is confined to limestone cliffs on the southern margin of the Nullarbor Plain in Western Australia.

### Introduction

*Opercularia* Gaertn. (Rubiaceae) is a small genus of 15 species endemic to temperate Australia. Unlike its close relative *Pomax* Sol., which shows its greatest species diversity in the arid zone, *Opercularia* has its major centre of diversity in south-western Australia. There are currently 10 named species of *Opercularia*, all confined to the South West Botanical Province except for *O. spermacocae* Labill., which extends north to North West Cape in the Eremean Botanical Province. One other species of *Opercularia*, newly described in this paper, is restricted to the Eremean, inhabiting limestone cliffs on the western side of the Great Australian Bight.

The limestone cliffs formed where the uplifted Nullarbor Plain meets the Great Australian Bight have a dry Mediterranean climate milder than that of the arid plain (McKenzie & Robinson 1987). Soils are often less calcareous than on the plain and this has enabled a diverse assemblage of plants from the south-west's Mediterranean climate to occur here (Keighery *et al.* 1987). There is also a suite of plants confined to (e.g. *Anemocarpa calcicola* Paul G. Wilson (Asteraceae) and the new *Opercularia* species), or centred on these cliffs (e.g. *Stenopetalum saxatile* ms. (Brassicaceae) and *Spyridium tricolor* W.R. Barker & Rye (Rhamnaceae)).

### Taxonomy

***Opercularia loganioides*** G.J. Keighery, *sp. nov.*

*Typus*: Twilight Cove, Western Australia, 16 October 1966, A.S. George 8562 (*holo*: PERTH 03258122; *iso*: CANB, K, MEL).

Frutx erectus virgatus, perennis, circa 20 cm latus, ramulis teretibus, canaliculatus. Folia, glabris, sessilis, obovata, acuminata, odorata, 2–6 mm longa. Flores 1–3, in umbellis compositis terminalibus, pedunculo 1 mm longo. Bracteis pluribus (linearibus) usque 3 mm longa.

Much-branched stiff twiggy erect foetid *sub-shrub* to 25 cm high and 20 cm wide from a slightly woody base. *Young stems* covered by glistening protuberances, slightly rough. *Older stems* leafless, grey, glabrous, with prominent longitudinal grooves, smooth, younger branches angular. *Stipules* connate to leaf base forming a sheath around nodes with one linear-triangular lobe covered in unicellular hairs. *Leaves* sessile, opposite, 2–6 mm long, 3–4 mm wide, glabrous, entire, margins recurved, apex acute. *Peduncles* solitary in the axils of leaves at the ends of branches, apparently dichotomously branching from the same node, recurved, 1–3 mm long (shorter than subtending leaves). *Inflorescence* of 1–3 flowers basally fused into hemispherical head. *Calyx* lobes linear-triangular, glabrous. *Petals* linear-triangular, glabrous. *Stamens* c. 1.5 mm long, white, with two parallel versatile anther cells. *Ovary* green, inferior, 1.5–2.0 mm long. *Styles* 2–3 mm long. *Fruit* a capsule, with 2 short umbones per cell. *Seeds* not seen. (Figure 1)

*Other specimens examined.* WESTERN AUSTRALIA: Toolinna Cove, 5 May 1992, P.J. Spencer & A.S. George T12 (PERTH); Toolinna Cove, 16 Oct. 1985, G.J. Keighery & J.J. Alford 1022 (PERTH).

*Distribution and habitat.* Occurs on limestone clifftops, in deep sand or skeletal loams. Both known areas of occurrence are in Nuytsland Nature Reserve.

*Phenology.* Flowering appears to occur in autumn. Fruits are present from September to November.

*Conservation status.* CALM Conservation Code for Western Australian Flora: Priority Two. This species, although of restricted distribution, has all known populations in Nuytsland Nature Reserve and is not considered under threat.

*Etymology.* The specific name refers to the close resemblance to several coastal species of *Logania* R. Br. (Loganiaceae), with which genus it has been confused when not in flower.

*Discussion.* This species has been known by the phrase name *Opercularia* sp. Twilight Cover (A.S. George 8562). It does not appear to be closely related to any other members of the genus in Western Australia and can be readily distinguished from them by its stiff twiggy glabrous shrub habit and its small inflorescences on short recurved peduncles. Several eastern Australian species (*O. ovata* Hook. f., *O. turpis* F. Muell. and *O. varia* Hook. f.) have inflorescences on peduncles shorter than the leaves. *Opercularia ovata* is glabrous, but has larger leaves (7–18 mm long) and an inflorescence of 10–20 flowers. *Opercularia varia* has ovate, often densely hairy leaves and an erect inflorescence of 2–4 partial heads of 2–7 capsules. Both of these species are generally herbaceous perennials. *Opercularia turpis* is an erect twiggy shrub and is possibly the closest relative of *O. loganioides*, but differs in being almost leafless, dioecious and having larger inflorescences.

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An Australian Biological Resources Study grant to the author enabled him to examine collections of *Opercularia* held in Herbaria throughout Australia (PERTH, AD, HO, CANB, MEL, Atherton, Alice Springs and Darwin) and at K. The curators and their staff provided access and a pleasant workplace.

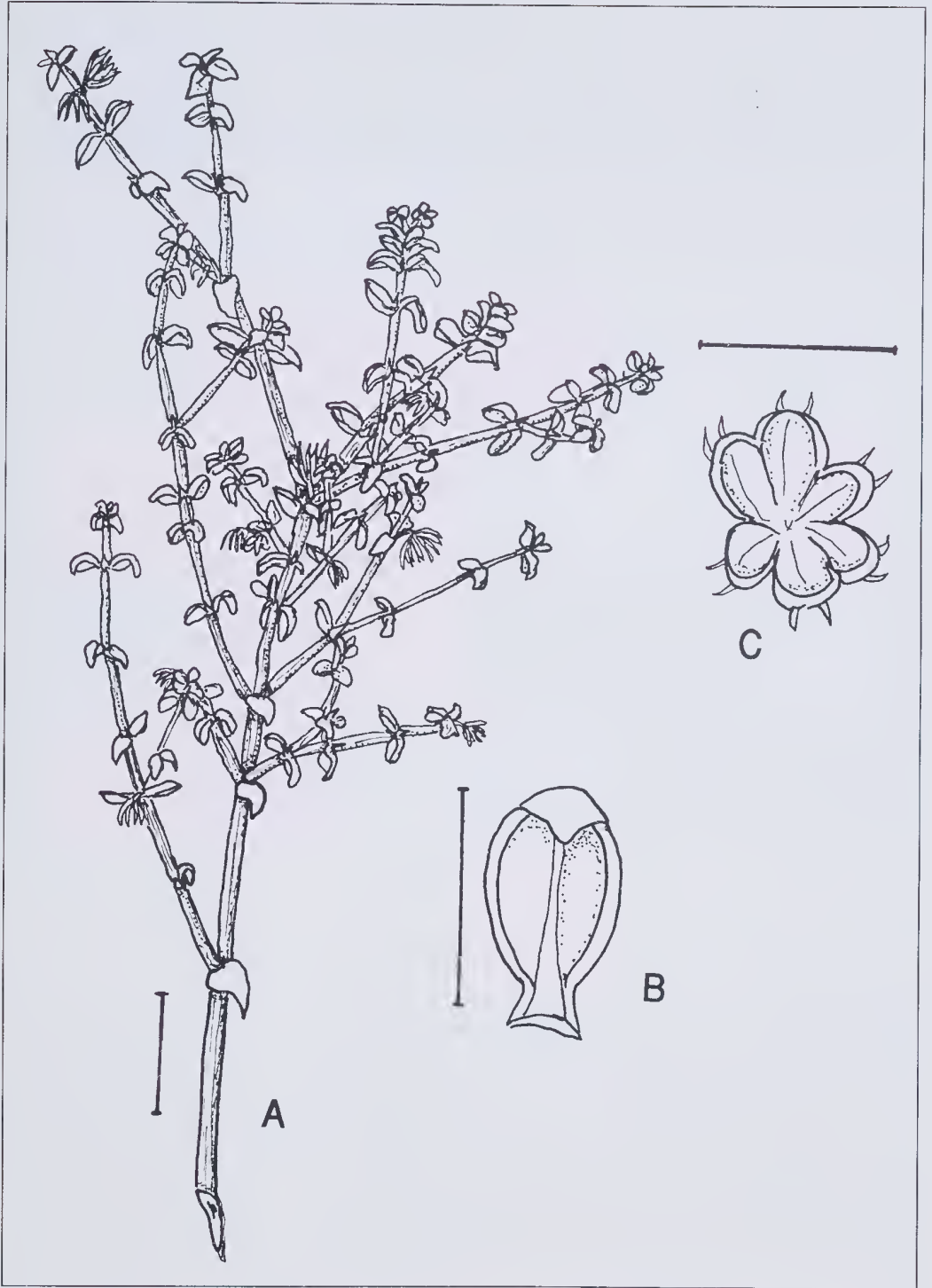


Figure 1. *Opercularia loganioides*. A - flowering branch, scale bar = 1 cm; B - leaf undersurface, scale bar = 5 mm; C - fruit, scale bar = 5 mm. Drawn from A.S. George 8562 (A,B) and G.J. Keighery & J.J. Alford 1002 (C).

### References

- McKenzie, N.M. & Robinson, A.C. (eds, 1987). "A Biological Survey of the Nullarbor Plain in south and West Australia in 1984." (Government Printer: Adelaide.)
- Keighery, G.J., Robinson, A.C. & Downing, B.H. (1987). Vegetation. *In*: McKenzie, N.M. & Robinson, A.C. (eds) "A Biological Survey of the Nullarbor Plain in south and West Australia in 1984." pp. 39–102. (Government Printer: Adelaide.)